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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,504	06/09/2008	**Marvin Ward**	5261-105US//P28363-A USA	1700

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EXAMINER	
D AGOSTA, STEPHEN M	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,504	WARD ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4-24-2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 June 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 13-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Hohnstein and further in view of Blasing. (***Prior art from applicant's IDS***)

As per **claims 1 and 13,** Hohnstein teaches a multi-function radio system comprising:

one or more data grid elements (figure 1 shows multiple access points which have set coverage areas/grids), each data grid element comprising:

> one or more smart edge wireless hubs (figure 1 shows wireless access points, #22) comprising:

hub-radio means for transmission and reception of radio signals (figure 1 shows communications among the access points #22 and hubs #40);

a hub-micro-controller means for selecting transmission and reception parameters of said hub-radio means (figure 2 shows the details of the hub/distribution point and controller/router-switch #114 which provides routing/switching functions to packets, C9, L5-16. Also see figures 4-5 which show access point/hub with IP addressing which inherently requires a routing protocol to select paths used); and

> a central processing unit comprising:

a core-radio means for transmission and reception of signals (figures 1-2 show access point and hub/distribution design which uses a

"core" infrastructure and selection among various signals/wired/wireless technologies – see C4, L29-36 and also C8, L49 to C9, L4);

an internet packet switching means for dynamically routing one or more information packets to said smart edge wireless hubs (figure 2 shows packet switch, #114);

core-micro-controller means for selecting transmission and reception parameters of said core-radio and of said hub-radio,

said core-micro-controller means including a transmission type selection means for automatically selecting to switch said hub-radio means and said core-radio means from transmitting and receiving using a first radio modulation type to transmitting and receiving using a second, different, radio modulation type (C4, L4-45).

but is silent on

microwave connections/links.

Note that Hohnstein teaches support for many different radio technologies and protocols (eg. both wired and wireless). Hence substituting microwave technology would be envisioned within "the spirit and scope" of his teachings (C17, L5012).

Blasing is put forth to teach microwave technology being used to connect access points to central hub(s) via sectorized antennas:

Point-to-point microwave links 70 may also be used to connect together different hubs. These links 70 employ narrow beam antennas 72. In this embodiment, one half degree transmitting and receiving antenna arrays might be employed. Point-to-point microwave links 70 can transmit or receive 1,000 MHz signals directly from the telephone network 60. This arrangement may provide a means to add new antenna arrays to the system 58 for particular regions, such as those where fiber links have not been installed. C11, L4-12

It would have been obvious to one skilled in the art at the time of the invention to modify Hohnstein, such that microwave links connect the hubs, to provide means for

supporting well known wired/wireless technologies to connect the various hubs/distribution points.

As per **claims 2 and 14,** the combo teaches Claim 1/13, wherein said core-micro-controller means further includes a packet measurement means for obtaining a quality-of-service measure related to said transmission and reception of said radio signals (Hohnstein, C5, L1-20 teaches identifying a QoS for a user, eg. quality bit error rate).

As per **claims 3 and 15,** the combo teaches claim 1/15 wherein said first and second radio modulation types are dynamically selected from the group consisting of Quadrature Amplitude Modulation (QAM), Quadrature Phase Shift Keying (QPSK) and Orthogonal Frequency Division Multiplexing (OFDM), responsive to said quality-of-service measure (see Hohnstein C4, L29-45).

As per **claims 4 and 16,** the combo teaches claim 2/14, wherein said core-micro-controller means further includes an antenna type selection means for automatically selecting to switch said hub- radio means and said core-radio means from transmitting and receiving using a first antenna type to transmitting and receiving using a second, different, antenna type and wherein said first and second antenna types are selected from the group consisting of an omni antenna and a multiple sector antenna (Hohnstein teaches use of Omni antennas, see C15, L29-55. Blasing teaches support for both use of Omni and Sectorized antennas – furthermore, one skilled understands that access points can use either one, the other or both types of antennas).

As per **claims 5 and 17,** the combo teaches claim 2/14, **but is silent on** wherein said core-micro-controller means further includes a transmission frequency selection means for selecting a transmission frequency by reference to a centralized or distributed registrar of all frequencies available to all said smart edge hubs.

Note that while Hohnstein teaches an Omni antenna design, Blasing teaches a sectorized antenna design. Hence Hohnstein allows any/all frequencies to be used throughout the entire coverage area whereas Blasing uses a sectored approach which typically separates out different frequencies to different sectors. Therefore one skilled sees that either all frequencies are used throughout or they are broken into different ranges to be used by different sectors and some type of "processor/controller" would run software to control these designs.

Hohnstein teaches identifying a QoS bit error rate which needs to be sustained or changed and Parkvall teaches modifying "transmission parameters", such as data rate or modulation, etc., to ensure a QoS is achieved (Abstract, figure 3 table, figure 11 shows determining max data rate, figure 12 shows adjusting various "parameters").

The examiner takes **official notice** that either a centralized or distributed registrar would be used to keep track of which frequencies are used within which sector of the coverage area as well as across the different access points (eg. frequency re-use).

It would have been obvious to one skilled in the art at the time of the invention to modify the combo, such that herein said core-micro-controller means further includes a transmission frequency selection means for selecting a transmission frequency by reference to a centralized or distributed registrar of all frequencies available to all said smart edge hubs, to provide means for centralized/distributed control of the assigned frequencies that are used by the hubs/distribution points when supporting data transmission/reception.

Claims 6-7, 18-19 and 25-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Hohnstein/Blasing and further in view of Parkvall

As per **claims 6-7 and 18-19,** the combo teaches claim 5/2/17/14 wherein said transmission frequency selection means is responsive to said quality of service measurement AND wherein said core-micro-controller means further includes means for adjusting a transmission power and/or a bandwidth of said core-radio means responsive to said quality-of-service measure.

Hohnstein teaches identifying a QoS bit error rate which needs to be sustained or changed.

Parkvall teaches modifying "transmission parameters", such as data rate or modulation, etc., to ensure a QoS is achieved (Abstract, figure 3 table, figure 11 shows determining max data rate, figure 12 shows adjusting various "parameters").

The examiner takes **Official Notice** that one skilled can sustain an RF link by performing power control changes, change in modulation, change in data rate, change in frequency if that certain frequency is experiencing fading/interference, etc..

As per **claims 25-26,** the combo teaches claim 2/14 wherein said means for automatically selecting to switch said hub-radio means and said core-radio means from transmitting and receiving using a first radio modulation type to transmitting and receiving using a second, different, radio modulation type is responsive to said quality of service measurement.

Hohnstein teaches identifying a QoS bit error rate which needs to be sustained or changed.

Parkvall teaches modifying "transmission parameters", such as data rate or modulation, etc., to ensure a QoS is achieved (Abstract, figure 3 table, figure 11 shows determining max data rate, figure 12 shows adjusting various "parameters").

The examiner takes **Official Notice** that one skilled can change various RF parameters/hardware to sustain an RF link by performing power control changes, change in modulation/protocol, change in data rate, change in frequency if that certain frequency is experiencing fading/interference, change in antenna type, etc..

Claims 8-10 and 20-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Hohnstein/Blasing and further in view of Cain

As per **claims 8 and 20,** the combo teaches claim 1/13, **but is silent** wherein said central processing unit further includes means for establishing a primary and a secondary transmission channel over diverse paths.

Hohnstein teaches routing between the various hubs/access point, see figures 6-8. These routing table inherently understand which paths provide a primary/preferred path, perhaps as based on shortest hops or highest data rate, versus having secondary/backup paths to be used if experiencing congestion, primary link failure, etc.

Cain teaches routing packets over "primary/typical" paths a change is required due to either congestion, link failure, etc:

> The virtual circuit route from source to destination will remain dedicated for that purpose until rerouting is required, either due to a link failure along the route or due to traffic congestion. C2, L35-55

It would have been obvious to one skilled in the art at the time of the invention to modify the combo, such that wherein said central processing unit further includes means for establishing a primary and a secondary transmission channel over diverse paths, to provide means for diverse routing paths to overcome single-point failures and/or congestion.

As per **claims 9 and 21,** the combo teaches claim 8/20, wherein said central processing unit further includes means for traffic rerouting responsive to a failure to transmit said information packet (Hohnstein teaches routing between the various hubs/access point, see figures 6-8. These routing table inherently understand which paths provide a primary/preferred path versus having secondary/backup paths to be used if experiencing congestion, **primary link failure**, etc).

Cain teaches routing packets over "primary/typical" paths a change is required due to either congestion, link failure, etc:

The virtual circuit route from source to destination will remain dedicated for that purpose until rerouting is required, either due to a link failure along the route or due to traffic congestion. C2, L35-55

As per **claims 10 and 22,** the combo teaches claim 8/20, wherein said central processing unit further includes means for traffic rerouting responsive a traffic load imbalance (Hohnstein teaches routing between the various hubs/access point, see figures 6-8. These routing table inherently understand which paths provide a primary/preferred path versus having secondary/backup paths to be used if experiencing **congestion,** primary link failure, etc).

Claims 11-12 and 23-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Hohnstein/Blasing and further in view of Fox

As per **claims 11-12 and 23-24,** the combo teaches claim 1/11/20/23, **but is silent** wherein said information packets comprise secured, sealed electronic packets AND wherein said secured, sealed electronic packets comprise header means responsive to packet tampering.

Blasing teaches using different types of security/encryption (eg. via frequency hopping, encryption of the data, etc), see Col 29-31 which teaches scrambling, descrambling, use of security public/private keys, hidden codes, etc..

Furthermore, the examiner notes that **Fox** teaches digital signatures and hashing is another manner in which security can be provided:

At step 74, the participant generates a digital signature that is unique to the participant and to the message. The digital signature is computed by hashing the data contained in the registration packet. A hash function is a mathematical function that converts an input data stream into a fixed-size, often smaller, output data stream that is representative of the input data stream. Once the hash is computed, it is encrypted by

the computing unit with the private encryption key of the signing pair (step 76 of FIG. 4). **C9, L15-44**

The credential binding server then performs a two-step verification technique to verify that the packet actually originated from the participant, and not an impostor. At step 96, the credential binding server recalculates the participant's digital signature by hashing the data contained in the decrypted registration packet using the same hashing function employed by the participant. The recalculated hash is then compared with the decrypted hash received as a digital signature, i.e., privately encrypted hash, in the registration packet (step 98 in FIG. 5). If the two hashes match, the credential binding server is assured both that the registration packet was indeed signed by the participant and that the contents have not been subsequently altered. **C10, L65 to C11, L10**

Hence the "encryption" can be viewed as securing/sealing data packets transmitted to/from a user. CRC and Parity are also other ways in which to determine if data is received correctly or if data has been changed/manipulated (and can be placed in the data or header).

It would have been obvious to one skilled in the art at the time of the invention to modify the cobo, such that wherein said information packets comprise secured, sealed electronic packets AND wherein said secured, sealed electronic packets comprise header means responsive to packet tampering, to provide encrypted, tamper-proof communications between hubs and users for security.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is found in the PTO-892 form as well.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lun Yi Lao can be reached on 571-272-7671. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen M. D'Agosta/
Primary Examiner, Art Unit 2617